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Reviews briefly several types of research studies which focus primarily upon a problem of a particular college or department or, in some instances, around the special interest of an individual faculty member. The studies described—all conducted at the University of Minnesota—include a study on the role of foreign languages in the College of Science, Literature, and the Arts, a study of student achievement in general education courses, and studies of teaching methods, class size, and test development and analysis.

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College Self-Study
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VIII. Research Done for the Faculty

. . . . . John E. Steckiein

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The studies described in Chapter VII, with only a few exceptions, were sponsored by all-university committees or by committees representing the University Senate.

Another type of study is often made by the Bureau, however, in which research is focused upon a problem of a particular college or department, or in some cases, around the special interest of an individual faculty member. Prime examples of the former are the study of the Role of Foreign Languages in the College of Science, Literature and the Arts, and the analysis of achievement in general education courses of the SLA college. Examples of studies conducted in cooperation with individual faculty members include studies of teaching methods, class size, testing programs, and work on test development.

Role of Foreign Language

In 1947, the College of Science, Literature, and the Arts at the University of Minnesota, adopted a program whereby a students was given the option of taking work in a Foreign Language (called Plan 1) or work in a variety of humanities courses (called Plan 2) as part of his required work in the lower division of that college. When the plan was initiated, the faculty stipulated that the program should be reviewed at the end of five years in order to determine what effect the option had had upon the departments involved, and upon the work of the students. In 1955 the Bureau of Institutional Research was asked to work with the special committee appointed to study the effects of the Plan 1 - Plan 2 option.

The three-fold study included (1) a special analysis of all the courses taken by the first group of students affected by the option during the following four years, (2) a questionnaire study of all faculty members in the SLA College concerning the importance of foreign languages to them, and (3) an intensive interview study of the teachers of foreign language, to collect in a consistent fashion their views concerning the need for foreign language study as part of the lower division requirement in this college. Because you will be able to read the report of the study at your leisure, I will not spend much time on the detailed results of the study.

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Briefly, the study of student records indicated that one-third of the first class to be affected by the Plan 1-Plan 2 option had taken no foreign language in college, and 18 per cent had had no foreign language in either high school or college. These results, in my view, did not indicate a mass avoidance of foreign language under the option. The majority of the SLA faculty indicated a preference for the continuation of the option, while the foreign language teachers advocated reinstatement of the foreign language requirement. The special committee finally recommended that the option be abolished and that the study of foreign languages again be required of all students who take lower division work in the SLA college.

Actions such as this represent one of the frustrations of a person in institutional research. The mere establishment of an institutional research unit does not in itself guarantee that decisions will be made on a more realistic, objective, and reasonable basis. As you can see, even in our institution, with its long tradition of faculty-oriented institutional research, faculties and faculty committees have been known to make decisions on other than a purely objective basis.

Evaluation of Student Achievement in General Education

In further keeping with the Minnesota tradition of self-scrutiny, another example of less-than-desirable expectation and utilization of the Bureau's services appears to be in order. Due to increased restiveness of certain faculty members about the general education unit of the College of Science, Literature, and the Arts--the General Studies department--the SLA Dean appointed a special committee on general education to study all general education provisions of the college.

I shall not take the time to go into the reasons for the faculty restiveness; as you can imagine, the reasons were many and varied, but the reason which was most frequently stated was that there was some uncertainty as to the value and quality of the courses offered by the General Studies department. Several individuals teaching in the basic subject fields felt that the kinds of courses offered by the General Studies department did not provide the kind of general education that the students should have, and that the introductory courses in the basic subject fields would better serve the purpose. Others flatly stated that the courses offered were not of college level.

When members of the Bureau staff met with the committee to assist in planning the studies, the committee did not have a clear idea of exactly what it was supposed to do or where to start. The Bureau was asked to make a few limited studies of costs, of departmental growth, and of student enrollment, and to design a questionnaire to be sent to faculty members (which was not sent), but in general, no unified concept of research was evolved.

One of the major questions which the committee wanted to resolve was the effectiveness of the course offerings of the General Studies department. But the committee tied the hands of the Bureau staff by insisting that the study would have to be based upon available data. It did not want to enter into any long range research study which would require the development of tests, test administration and data analysis that would require many months to complete. Inasmuch as only one set of college achievement test scores were available for the General Studies students--the Sophomore General Culture Test--and this test was not well-suited to the purpose, a severe limitation was imposed upon the research design.

The quality of the students who enrolled only in the General Studies courses was compared with the quality of students who enrolled only in the conventional introductory courses, as measured by high school rank, ACE test scores, and Cooperative English Test scores. Scores on the Sophomore General Culture test achieved by students who satisfied their lower division requirements by taking all of their course work in the General Studies department were compared with scores achieved by students who satisfied their lower division requirements by taking all of their course work in the regular subject matter departments, in order to see whether there was a significant difference between the achievement of these two groups. No statistically significant differences were found, either in student quality or in Sophomore General Culture test scores.

While it was recognized that the generalizability of these research findings was quite limited, the analysis did provide the only available objective information about the relative value of the two types of courses. But the findings of this research apparently had little effect upon the committee because it recommended the curtailment of control of the General Studies department over its course offerings and staffing and the establishment of three interdisciplinary committees composed of staff members from the conventional departments, to assume control.

Interestingly, a minority report, which made an even stronger recommendation to abolish the unit as a department and replace it with a program, quoted the results of the study, but reversed the implications to suggest that, inasmuch as the special general education courses were doing no better than the conventional introductory courses, there was no need for them. This represented a slight reversal from the earlier complaint that General Studies courses were not as good as the basic subject matter courses.

You will be interested to know that the SLA college faculty subsequently supported the recommendations of the minority report.

The Bureau of Institutional Research did not provide an effective and useful service to this faculty committee, partly because of the time limitations imposed, but more importantly, in my estimation, because the

members of the committee did not really seek objective and unbiased data concerning the problems which they were considering. An institutional research unit, whether it be a single person devoting part or full time to the activity or whether it be a fully established research bureau, can only be as effective as the data which are available, the amount of time made available for research, and the intentions of the person or group for whom the research is being conducted, permit.

Research Involving the Teaching Process

Many comparative studies of methods of instruction, both formal and informal, are conducted each year throughout the country, and one could devote the whole institute to the discussion of such studies. I will restrict my attention this morning to a sample of the kinds of studies which have been conducted at the University of Minnesota. Your attention is also called to the brief survey and critique of published research on class size and teaching methods among your bibliographic materials, for an overview of the subject. This report was written by a Bureau staff member for distribution to all deans and department heads in the University, both as a means of informing them of research of this type and to encourage possible experimentation in these areas. Today, I will give you brief descriptions of comparisons of teaching methods in physics, physiology, and psychiatry, a study of class size, and a study of the use of student ratings of instruction and leave the details to the reports which you have.

Good experimental studies of teaching methods or class size are very difficult to develop, especially on any large scale. Prohibitive obstacles include deans and department heads who do not want their carefully structured registration procedures and class schedules to be disrupted and faculty members who do not want to teach any heavier loads than they have to, either in terms of more classes or more students, even for the sake of research which might benefit them in the long run. Other problems include drop-out of students, the need for large enrollments, random assignment of students, establishment of control sections, adequate development, refinement, and pilot administration of measuring instruments, and experiment contamination by informational exchanges between students in the experimental and control groups.

Methods of Instruction and Class Size

In the experimental study conducted in elementary physics, the Bureau staff worked closely with one member, and received advisory assistance from other members of the physics department, in developing measuring instruments and in designing the study; which is reported in Chapter 10 of A University Looks at Its Program. The experiment compared two methods of teaching elementary physics: (1) use of conventional laboratory experiments which the students were required to perform, and (2) use of instructor demonstrations of the experiments, with no direct student laboratory work.

Four types of tests were developed to measure the different types of achievement--one test of physics theory and three practical laboratory tests. In general, the laboratory groups showed higher scores on the three tests dealing with the laboratory material but no differences were noted between the groups on the theory tests.

A similar study, conducted with the physiology department, also involved two different methods of instruction for freshmen medical students--a straight-forward lecture technique and a lecture and seminar approach involving student discussion of basic research literature. Each method was shown to have advantages related to the specific objectives, but overall, no significant differences were noted.

A third study illustrates an experiment involving changes in behavior other than the usually measured achievement gains or losses. The purpose of the study, involving premedical students in their junior clerkships, was to determine whether changes in students' attitudes toward psychiatry would be associated with different sequences of clerkships. As the report in Chapter 15 of A University Looks at Its Program relates, such changes were found, and further experiments were encouraged.

Class Size

A study of class size is just being completed. In this project, comparisons were made of the effect upon student achievement of instruction in a business accounting course where the students were taught in classes of size 20, 40, and 80. This case illustrates beautifully how restrictions of schedules and registration procedures can restrict or even prevent a good experimental study in instruction. Several years ago, the Bureau was asked to draw up an experimental design for a class size study. When the design was sent to the department head who had requested it, he stated that the scheduling of classes and assignment of teachers could not be modified to satisfy the requirements of the experimental design. A modified experimental design which, although not ideal, permitted a certain number of comparisons of the effects of instruction in classes of different sizes, was again rejected as being impossible to set into operation.

Nearly three years later, one of the staff members of that department came to the Bureau for assistance in planning the same study of class size. Despite some misgivings, the Bureau helped plan an experiment which would provide some limited evidence concerning the effectiveness of instruction to classes of three different sizes. No significant differences were found between the achievement of the students in the classes of the various sizes.

Still another type of study evolved from both student and faculty interest in the evaluation of instruction by students. Once again Bureau staff members worked closely with a faculty committee, not only in the development and refinement of the several forms which were tried out and

used, but in the mechanics of setting up the distribution and collection of the forms, and in the special analyses made to identify possible biasing influences upon student ratings. The study is reported in Chapter 23 of A University Looks at Its Program, and a sample copy of form D is included in this volume. These forms are still in use on a voluntary basis by faculty members in several of the colleges in the University. No administrative use has been made of these forms, however.

I have not discussed experimental studies involving the use of television. Although to date our Bureau has not been directly involved in any study of this type, the University Laboratory schools have a television study underway as part of their research program. Their experiment involves the use of closed circuit Television to enable student teachers to observe experienced teachers in the classroom without actually visiting the class. While this type of study might normally come within the scope of Bureau activities, the fact that this study is supervised by a former director of the Bureau and is financed by foundation funds, obviates the need for the Bureau's assistance.

Test Development and Analysis

Work with individual staff members or faculty groups in the development of comprehensive examinations and screening tests or new types of measuring instruments has been a part of the Bureau's activities since the first committee was formed. An example of the latter--the development of a listening test--is described in Chapter 11 in A University Looks at Its Program. Currently, the Bureau is participating in the development of a battery of music achievement tests, providing technical assistance in the writing of items, statistical item analysis, the development of norms, and the validation of the tests.

Conclusion

These chapters are, then a capsule description of research on and for the faculty at the University of Minnesota. I have probably tried to tell you too much in the amount of time available, but on the other hand, much more remains to be told. Although the several studies selected for your quick purview are too few to give a complete picture, they do reflect the great variety of studies which can and should be made of college and university faculties and the kinds of studies which individual faculty members should be motivated to do and assisted with, if the broad definition of institutional research is to prevail in an institution. Although much remains to be done to perfect such studies, still more research on and by the faculty is urgently needed if we are to understand better the operation of a college or university and the role of the faculty member in this operation.

Needed Research

For instance, we need to know what motivates a person to do a good job, or to do a particular job in preference to some other activity.

We need to know what makes one person so conscientious about meeting a deadline, serving well on a committee, turning out a good manuscript, meeting students, or preparing class lessons, that his own personal, family, and social life suffers as a result, while another person, ostensibly imbued with the same kinds of professional interests, and having essentially the same kind of background and training, will miss classes, fail to meet appointments, or fail to complete a committee assignment without any visible signs of dismay or guilt? What roles do administrators play as motivators or discouragers of research activity or instructional improvement? Will more free time for faculty members to think, write, and do research actually result in an increase in the amount of research and the number of manuscripts? Are the incentives too limited in terms of the present faculty rank and salary structures to encourage faculty members who have reached a certain rank or salary ceiling to continue to produce and grow?

Why can we not generate more interest in systematic and broad scale experimental studies of different class sizes or different methods of instruction? Would not a carefully designed systematic comparison of the effect upon instruction of different class sizes in 8 or 10 subject fields, conducted simultaneously in a sampling of institutions throughout the country, have more impact upon the current operation and scheduling of college and university programs today than do the multitude of isolated studies and armchair prescriptions which are currently being made?

Or do we need to make such kinds of studies? Do we already know what kinds of results will emerge? Is the problem really one of overcoming faculty apathy or plain stubborn resistance to change?

How will and how should the development of television influence the role of the faculty member in the college and university? Have those faculty members who have participated in educational television broadcasts changed their classroom habits and practices as a result of such participation? To what extent have their attitudes toward educational television been changed?

As you can see, if allowed to continue, my list of questions would far exceed the list of research studies which have already been completed. Research at Minnesota is in the planning stage or underway to provide answers to some of the questions just raised. But knowledge about what makes a college professor tick and how his services can be used to maximize simultaneously his efficiency, his satisfactions, and the quality of the educational product is so sketchy, that the attention and resources of hundreds of research units are needed to help fill this void.

UNIVERSITY OF MINNESOTA

Student Report on Classroom Teaching

Form D

Your instructors are anxious to make each course of greatest possible value to the students. In every course there is always room for improvement. Thoughtful student reactions to the work of the class have proved their worth to many instructors.

The present report form gives you an opportunity to pass on to the instructor your comments and suggestions without identifying yourself. Your ratings will be strictly anonymous. In addition, they will be summarized and reported in such a way that only your instructor will know what comments and suggestions are made about his class. You are asked to make your responses conscientiously and individually, since your ratings will be used in improving this course in coming quarters.

DIRECTIONS

Your ratings are to be indicated on this sheet. Select the one descriptive phrase under each item which best describes your instructor or his teaching, and **circle the letter in front of that response.** Work rapidly. Do not consult with classmates; make your own ratings. **Do not sign your name!** Circle **one** letter from each item to indicate the response you think is best.

Before beginning your ratings, please mark the following: to indicate

Your present college standing?

I Freshman II Sophomore III Junior IV Senior G Graduate Student O Other

Your over-all grade average at this University?

A B+ B B-- C C+ C-- D

The college of the University you are in?

A Institute of Technology B Education C Institute of Agriculture

D S.L.&A. E General College F Other_____

Your sex? Male_____ Female_____

---

1. How clearly does your instructor present his subject matter?
   - A. Very clear in presentation
   - B. Fairly clear
   - C. Somewhat clear
   - D. Not very clear
   - E. Not at all clear in presentation
2. How well does he adjust to your level of comprehension?
   - A. Nearly always adjusts to my level
   - B. Usually adjusts to my level
   - C. Adjusts to my level more often than not
   - D. Adjusts to my level about half of the time
   - E. Seldom adjusts to my level
3. How interesting does he make the material?
   - A. Much more interesting than I expected
   - B. Somewhat more interesting than I expected
   - C. About as interesting as I expected
   - D. Less interesting than I expected
   - E. I thought the course would be a bore and it is

4. How well does he seem to know the subject?
   A. Thorough and profound scholarship
   B. Knowledge broad and accurate
   C. Well-rounded knowledge of the subject
   D. Adequate knowledge
   E. Occasional gaps in knowledge

5. What is the feeling between him and the students?
   A. Extremely friendly in and out of class
   B. Quite friendly with students
   C. Rather friendly
   D. Little warmth in relations with students
   E. Rather unfriendly

6. How valuable are the text and other assigned readings?
   A. Outstanding in value
   B. Almost all parts are valuable
   C. Generally valuable
   D. Some parts are worth reading
   E. A waste of time

7. Is class time well spent?
   A. Every minute is well spent
   B. Almost all class time is well spent
   C. Time is usually well spent
   D. Class time is often wasted
   E. Class time is almost entirely wasted

8. How clearly are your responsibilities in this course defined?
   A. I always know what is expected of me
   B. I usually know what is expected of me
   C. I usually have a general idea of what is expected of me
   D. I often am in doubt about what is expected of me
   E. I seldom know what is expected of me

9. Do you feel that you are able to get personal help in this course if you need it?
   A. Can get a great deal of personal help from the instructor or assistants
   B. Can get quite a bit of personal help
   C. Can get a moderate amount of help
   D. Can get a small amount of help
   E. Can get no personal help from the instructor or assistants

10. Have grading policies thus far been fair?
   A. Unusually or exceptionally fair
   B. Fairer than most
   C. As fair as the average instructor's policies
   D. Unfair to some
   E. Unfair to many

11. How much actual work outside of class do you do for this course?
   A. An excessive amount for the number of credits received
   B. More than average for the number of credits received
   C. About average for the number of credits received
   D. Less than average for the number of credits received
   E. Very little for credits received

12. Would you recommend this course, in terms of its content, to a good friend whose interests are like yours?
   A. Yes, recommend it highly
   B. Yes, it is better than most courses
   C. Undecided
   D. No, it is not as good as most courses
   E. Definitely no

13. How would you rate your instructor in general (all-around) teaching ability?
   A. An outstanding and stimulating instructor
   B. A very good instructor
   C. A good instructor
   D. An adequate, but not stimulating instructor
   E. A poor and inadequate instructor

14. The following is a list of specific suggestions for the instructor or course. Circle the letter in front of as many or as few as you wish. Leave the others blank.

A. There should be better lights in the classroom
B. There should be better ventilation in the classroom
C. The classroom needs more blackboard space
D. The instructor should use more visual aids (charts, movies, models, etc.)
E. There should be more examinations
F. There should be fewer examinations
G. There should be less required outside reading
H. There should be more required outside reading
I. There should be less emphasis on memorizing in the examinations
J. The course should be covered better in the examinations
K. He should define the words he uses
L. Material should be presented more slowly
M. Less time should be spent in class discussion
N. Students should be encouraged to participate more in class discussions
O. The talkative students should be prevented from talking so much
P. The instructor should try to improve his appearance
Q. The objectives of the course should be explained more clearly
R. The course should include more material related to student experiences and problems
S. Work on the blackboard cannot be seen
T. The catalog description of the course should be re-written
U. The prerequisites for this course are not really necessary
V. The prerequisites for this course do not provide the necessary preparation
W. The course needs to be brought up to date
X. There should be more opportunity for answering questions in class
Y. I would like to get better acquainted with the instructor

COMMENT FREELY ON THE FOLLOWING QUESTIONS:

15. How well has this course met your needs, in terms of your personal and vocational goals? What might have been done to increase the worth of this course to you?

Should this overlap be reduced?

(CONTINUED ON NEXT PAGE)

16. Has this instructor stimulated your curiosity about the subject matter of the course and made you want to learn more about the subject?

17. Does the instructor try to relate the material of this course with other areas of knowledge? Is this helpful?

18. If this course presents controversial matters: How tolerant is the instructor in receiving expressions of opinions differing from his own?

19. Does the instructor have any personal peculiarities or mannerisms or speech habits that lower the quality of instruction, and that he might be able to correct? If so, what?

20. How could the examinations in this course be improved?

21. Do you have any other suggestions to the instructor for improving this course, or the instruction in the course?

Do you object if we cut off this half of the booklet and give it to the instructor? _____

Or must we type a copy of it before giving it to him? _____

John E. Stecklein